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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,193	05/09/2007	William C. Bushong	27860-31	3908

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EXAMINER	
YANCHUK, STEPHEN J	
ART UNIT	PAPER NUMBER
1795	

NOTIFICATION DATE	DELIVERY MODE
01/25/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USpatents@armstrongteasdale.com

Office Action Summary	Application No.	Applicant(s)	
	10/582,193	BUSHONG ET AL.	
	Examiner	Art Unit	
	STEPHEN YANCHUK	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09/24/2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *See Continuation Sheet* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,7,8,12-16,19,24,27,29-31,38,41,42,45-47,49-52,59,64 and 164* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Disposition of Claims: Claims pending in the application are 1,2,4,7,8,12-16,19,24,27,29-31,38,41,42,45-47,49-52,59,64 and 164.

DETAILED ACTION

1. This action is found non-final due to persuasive arguments from response filed 4/28/2009.

Election/Restrictions

After reviewing the arguments filed 09/24/2009, the examiner has decided to remove the restriction requirement since the connecting elements pertain to a structure of CuO and MnO_2. Since minimal alterations from this embodiment are claimed, there is no undue burden on the examiner.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1- are rejected under 35 U.S.C. 102(e)/103(a) as being anticipated or obviated by Yamaki et al (PGPUB 2004/0202933).

Claim 1, 2, 4, 7, 27, 29, 46-47, 29, 46-47, 48, 51: Yamaki teaches a lithium ion secondary battery having a high energy density based on the cathode material [Abstract]. The material is on the cathode. The battery of Figure 2 depicts a battery with an anode, cathode, and separator between [Figure 2]. The material on the cathode is taught to include MnO_2 and CuO along with other materials [Paragraph 73]. CuO acts meets the claim limitations of the "extender material" and MnO_2 satisfies the "Active material" limitations. A cell with an active material of MnO_2 and extender element of CuO inherently has the property of the extender having a discharge voltage lower than the initial discharge voltage of the primary active material. The capacity of the cells are found in Table 2.

Claim 8, 12-16, 41, 52, 56 : Yamaki teaches the cathode further comprising Lithium carbonate, lithium fluoride, chromium oxide, nickel oxide, cobalt oxide, iron oxide, aluminum hydroxide, and magnesium hydroxide [Paragraph 73]. The combination of these materials creates a material wherein the extender comprises the elements taught. The proportion of each are result effective variables to create a high energy density battery. The capacity of the extender is an inherent property and therefore since the materials combinations are taught by the prior art, the claim limitations are met.

It has not been claimed that the extender and the active material are not separate materials after formed on the cathode. As indicated by the specification, the materials do not necessarily need to be considered as separate once formed; IE not a bi-layer construction on the electrode.

Claim 19, 24, 59, 64: Capacity ratios and ratios are taught by the construction by the battery wherein the properties are result effective variables or inherent properties. The capacities are found in Table 2.

Claim 30, 31, 38: Yamaki teaches the anode comprising carbon incorporated with the anode construction [Paragraph 2, 23, 48, 50].

Claim 42: The material (12) is located between the case and the cathode [Figure 2].

Claim 164: Yamaki teaches a lithium ion secondary battery having a high energy density based on the cathode material [Abstract]. The material is on the cathode. The battery of Figure 2 depicts a battery with an anode, cathode, and separator between [Figure 2]. The material on the cathode is taught to include MnO_2 and CuO along with other materials [Paragraph 73]. Yamaki teaches the cathode further comprising Lithium carbonate, lithium fluoride, chromium oxide, nickel oxide, cobalt oxide, iron oxide, aluminum hydroxide, and magnesium hydroxide [Paragraph 73]. The capacity is taught to be over .5Ah [Table 2].

Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaki et al (PGPUB 2004/0202933) as applied to claim 1 above and further in view of Nanjundaswamy et al (PGPUB 2003/0211392)

Yamaki teaches a cathode material for a battery as taught above.

Claim 45 is rejected by the teaching that Lithium batteries have a higher voltage and higher energy density than alkaline batteries. It was established that Li/MnO_2 (Lithium) out preformed Zn/MnO_2 (Alkaline) batteries. Lithium cells are able to be used in higher voltage and higher power demanding equipment like cameras, which alkaline cells can not. The difference between Alkaline and Lithium batteries is the anode material, but they both comprise manganese dioxide as the cathode [Paragraph 3]. Therefore, it would have been obvious to one of ordinary skill in the art to have substituted the zinc anode for the lithium anode in the structure of the lithium battery described by Nanjudaswamy because it has been held that is obvious to substitute one known material for another known material each of which serves the same purpose. See MPEP 2144.06 II. A Zinc anode with the aforementioned cathode would give an alkaline battery that would meet the claimed structure. It would have been obvious for one of ordinary skill in the art to use Nanjundaswamy to modify Yamaki because Nanjundaswamy teaches a high density battery.

Response to Arguments

4. Applicant's arguments have been fully considered and are persuasive. The previous rejections have been withdrawn.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN YANCHUK whose telephone number is (571)270-7343. The examiner can normally be reached on Monday through Thursday 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/STEPHEN YANCHUK/
Examiner, Art Unit 1795
/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795